

COMPLETE LISTING OF CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A heat transfer system comprising a heat exchange component having a finned heat exchange surface immersed in a moisture laden atmosphere and a non-stick coating applied to the heat exchange surface, the non-stick coating adapted to inhibit adherence of frozen moisture to the heat exchange surface.
2. (cancelled)
3. (currently amended) The heat transfer system of claim 2 1 wherein the heat exchange component ~~further~~ comprises fluid transfer tubing having heat transfer fins in thermal contact with the fluid transfer tubing.
4. (original) The heat transfer system of claim 3 wherein the fluid transfer tubing and heat transfer fins are oriented to promote gravity flow of frozen moisture away from the heat exchange component.
5. (original) The heat transfer system of claim 1 further comprising a protective shell positioned around the heat exchange component, the protective shell also having non-stick coating adapted to inhibit the adherence of frozen moisture to the shell.

6. (currently amended) A heat transfer system comprising:

a heat exchange component having a heat exchange surface;

a non-stick coating applied to the heat exchange surface, the non-stick coating adapted to inhibit adherence of frozen moisture to the heat exchange surface; and

a protective shell positioned around the heat exchange component, the protective shell also having non-stick coating adapted to inhibit the adherence of frozen moisture to the shell, ~~The heat transfer system of claim 5~~

wherein the protective shell is shaped to enhance convection air flows through the shell and around the heat exchange component.

7. (currently amended) The heat transfer system of claim 6 wherein the protective shell further comprises outwardly flared top and bottom portions.

8. (currently amended) A heat transfer system comprising:

a heat exchange component having a heat exchange surface;

a non-stick coating applied to the heat exchange surface, the non-stick coating adapted to inhibit adherence of frozen moisture to the heat exchange surface; and

~~The heat transfer system of claim 1 further comprising~~

a fan positioned proximate the heat exchange component.

9. (original) The heat transfer system of claim 8 wherein exposed surfaces of the fan are coated with a non-stick coating.

10. (currently amended) A heat transfer system comprising:

a heat exchange component having a heat exchange surface;

a non-stick coating applied to the heat exchange surface, the non-stick coating adapted to inhibit adherence of frozen moisture to the heat exchange surface; and

~~The heat transfer system of claim 1 further comprising~~

a vibrator operatively connected to the heat exchange component to promote release of frozen moisture from the heat exchange surface.

11. (original) The heat transfer system of claim 10 wherein exposed surfaces of the vibrator are coated with a non-stick coating.

12. (currently amended) A heat transfer system comprising:

a heat exchange component having a heat exchange surface;

a non-stick coating applied to the heat exchange surface, the non-stick coating adapted to inhibit adherence of frozen moisture to the heat exchange surface; and

~~The heat transfer system of claim 1 further comprising~~

a base positioned below the heat exchange component, the base sloped downwardly and outwardly to direct frozen moisture accumulations away from the heat exchange component, the base provided with a non-stick coating adapted to inhibit adherence of frozen moisture.

13. (original) In a heat exchange system such as an air-source heat pump system, an open loop or closed loop water-source heat pump system, a direct expansion heat pump system, or an evaporative cooling system, the heat exchange system having at least one heat exchange component with exposed heat transfer surfaces, an improvement comprising a non-stick coating applied to the exposed heat transfer surfaces.

14. (currently amended) A method of inhibiting ice accumulation on an air-exposed heat transfer surfaces of a heat exchanger components in a heat exchange systems comprising the steps of:

(a) providing a finned heat transfer tubing having a heat transfer surface;

(b) shaping the heat transfer tubing to form an air-exposed heat exchanger adapted for use in a heat exchange system such as an air-source heat pump system, an open loop or closed loop water-source heat pump system, a direct expansion heat pump system, or an evaporative cooling system;

(c) coating the heat transfer surfaces with a non-stick material.

15. (original) The method of claim 14 wherein the non-stick material comprises PTFE.

16. (currently amended) A method of inhibiting ice accumulation on an exposed heat transfer surface of a heat exchange component in a heat exchange system

comprising coating the heat transfer surface with a ~~The method of claim 14 wherein the non-stick material comprises~~ fluoropolymer dip coating.

17. (original) The method of claim 14 wherein the non-stick material comprises a triazine-dithiol derivative.

18. (new) An atmospheric heat exchange system comprising:

a fluid transfer tubing adapted for immersion in a moisture laden atmosphere, the fluid transfer tubing formed into a heat exchanger array having fluid transfer tubing segments with generally non-horizontal slopes so as to remove moisture and frozen moisture by gravity flow, wherein the fluid transfer tubing segments are disposed within the heat exchanger array so as to reduce the amount of moisture or frozen moisture shed from any fluid transfer tubing segment that falls onto another fluid transfer tubing segment;

a refrigerant fluid flowed into the heat exchanger array, the refrigerant fluid having a temperature at or below the freezing temperature of moisture carried by the atmosphere; and

a non-stick coating applied to the fluid transfer tubing, the non-stick coating adapted to inhibit adherence of moisture and frozen moisture to the fluid transfer tubing.

19. (new) The heat exchanger of claim 18 further comprising:

heat transfer fins in thermal contact with the fluid transfer tubing, the non-stick coating further applied to the heat transfer fins.

20. (new) The heat exchanger of claim 19 wherein the heat transfer fins are oriented so as to remove moisture and frozen moisture by gravity flow in a manner that minimizes the shedding of moisture and frozen moisture from one portion of the fluid transfer tubing onto another portion of the fluid transfer tubing.

21. (new) The heat exchanger of claim 20 wherein the heat exchanger array comprises a generally helical spiral of fluid transfer tubing oriented along a generally horizontal axis.